S. HRG. 98-162

WATER RESOURCES RESEARCH ACT OF 1983

HEARING

BEFORE THE

SUBCOMMITTEE ON WATER RESOURCES

OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

NINETY-EIGHTH CONGRESS

FIRST SESSION

ON

S. 684

A BILL TO AUTHORIZE AN ONGOING PROGRAM OF WATER RESOURCES RESEARCH

MARCH 21, 1983

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WATER RESOURCES RESEARCH ACT OF 1983

MONDAY, MARCH 21, 1983

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON WATER RESOURCES,
Washington, D.C.

The subcommittee met at 2 p.m., in room SD-406, Dirksen Senate Office Building, Hon. James Abdnor (chairman of the subcommittee) presiding.

Present: Senator Abdnor.

OPENING STATEMENT OF HON. JAMES ABDNOR, U.S. SENATOR FROM THE STATE OF SOUTH DAKOTA

Senator ABDNOR. The Subcommittee on Water Resources will come to order.

I would like to welcome this afternoon's witnesses who are with us to testify on S. 684, the Water Resources Research Act of 1983.

This bill is essentially identical to S. 2494, which passed the Senate during the 97th Congress. It is intended to refine the Federal role in water resources research and target funding to the Nation's most pressing water research needs through a strengthened partnership with the States. The bill also would establish realistic authorization levels for the existing program, which has been handled in recent years by last-minute appropriations that left the future of the program unsettled.

S. 684 is intended to encourage the investigation of basic scientific issues that have broad regional implications. The need for such a program is pressing, and most Federal research which is conducted today in water resources addresses only specific Federal agency mission requirements. The broader picture is simply being missed.

Furthermore, this bill addresses the water research problem in a manner which promotes and encourages Federal/State cooperation in a cost-effective manner.

We are here today to obtain your valued advice on this important bipartisan legislative proposal. You can be assured that your views on this legislation will be given careful consideration by this subcommittee.

I regret to have to tell you all that trying to plan ahead in the Congress is an impossibility. I am a member of the conference committee on the jobs bill. Some things that I inserted into that bill I am going to have to be there for. I found out today that the conference committee is meeting. We are hoping that some other members will be here. We may keep this as short as possible while let-

ting everyone testify. I will stop talking here so we can get right on with the hearings.

I want to assure all of you that your entire statements will be made a part of the record. Also, I will allow the members of the committee to have several days for written questions if there are any. So with that understanding, we will go right ahead.

I am happy to see Mr. Tom Bahr back again this year. We are looking forward to hearing from you, Mr. Bahr.

STATEMENT OF THOMAS BAHR, DIRECTOR, OFFICE OF WATER POLICY, DEPARTMENT OF THE INTERIOR

Mr. BAHR. Thank you, Mr. Chairman. It is a pleasure to be here. We have submitted our written testimony and request that it become part of the official record.

Senator ABDNOR. It will be done, I assure you.

Mr. BAHR. It is fairly brief testimony. I will go through it rather quickly. Then I would be more than happy to answer questions.

Senator ABDNOR. OK, fine.

Mr. BAHR. The administration's position on S. 684, the Water Resources Research Act of 1983, is something I would like to discuss with you this afternoon. The bill, except for what appears to be a 1-year postponement of selected dates in the legislation, appears to be identical to S. 2494, which of course passed the Senate last June.

In reference to last year's legislation, Assistant Secretary Garrey Carruthers informed you by letter that the Department was opposed to S. 2494. We now oppose its successor, Senate bill 684, because we believe that the principal benefactors of this legislation—namely, States and industry—have responsibility to finance the research needed to support their water resources management or planning roles.

Public Law 95-467, an earlier Water Resources Research Act, the Water Research and Development Act of 1978, and its predecessor, Public Law 88-379, the Water Resources Research Act of 1964, authorized a process for use of Federal funds to stimulate research among States and industry to solve common problems. In the 20-year history of this program, the States have acquired much information that is useful in guiding water planning and policymaking as well as management.

The time has come, however, for States and industry to now take the lead responsibility for financing the research that is going to be benefiting them directly.

The President's budget, as you know, emphasizes selective reductions in the use of Federal funds for purposes that are more appropriately financed by others. Throughout history, this program has only been a minor part of the federally funded water research of the Federal Government. Federally supported salinity research has progressed to the point where the private sector alternatives are now feasible, and the technology is here and there is no further need for direct Federal support.

The more productive water institutes have also been able to generate substantial funding from other sources and are no longer dependent on funds which would be provided by this legislation.

Therefore, the position of this administration remains and is now in opposition to this particular piece of legislation.

I would be happy to answer any questions.

Senator ABDNOR. Thank you, Mr. Bahr. I guess we still have a difference of opinion on the need and the purpose and how we feel about this. In drawing up this legislation, we did try to create a system that would focus the water research program in a certain direction. Do you think we have put the right direction in the bill, even though you disagree with it? I mean, if you had to look at it, are we directing it in the right direction? Again, I understand you feel strongly that industry and the States can take it over. But if you had to have a bill, how does this shape up?

Mr. BAHR. Clearly the administration is supportive of water-related research. I don't think there should be a question about that.

Furthermore, we recognize that there have been significant outputs of this research in the past. The thing one has to look at is there is some $300 million worth of federally supported water-related research currently being conducted. I think this is evidence that there is a strong commitment on the part of the administration to support research.

We recognize that change has to occur, and we are taking an in-depth look right now within the Department of the Interior to see where we can streamline other research activities in the Department to enhance those that are more productive and to eliminate and scale down those that are not as productive.

Senator ABDNOR. I know we do have this disagreement with the Department. We appreciate your views on it. I am sure there are going to be numerous other questions we may ask you. We will submit them to you in writing, when everyone has an opportunity to review your testimony.

Mr. Bahr, I was reading something about this $300 million in research. I am not familiar with all of that. What are some of the other areas?

Mr. BAHR. Major programs, of course, in the Environmental Protection Agency, in the U.S. Geological Survey, Department of Agricultural, National Science Foundation, and others.

Senator ABDNOR. Maybe you could do this in writing. Would you give us a breakdown on this and where you think there is overlapping in it, rather than just a general $300 million?

Mr. BAHR. Yes; I would be happy to.

[The information requested follows:]

United States Department of the Interior

OFFICE OF WATER POLICY
WASHINGTON, D.C. 20240

MAR 30 1983

Honorable James Abdnor
Chairman
Subcommittee on Water Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed is the information you requested at the Hearing on S.684 on March 21, 1983, regarding Federal expenditures for water research. In 1980 the Office of Water Research and Technology and the Office of Science and Technology Policy assembled information on the Federal water research budget for 1981. This information is summarized in the enclosed table. Note that the categories of research are broken down into six areas, with a total expenditure of approximately $356 million. This information has not been updated since that time. However, we feel it is still a reasonably accurate portrayal.

Sincerely,

Thomas G. Bahr
Director

Enclosure

Federal Water Resources Research Budget - FY 1981

Research Category and Agencies	(Dollar Amounts in Thousands)
I. Atmospheric, Hydrological, and Hydraulic Processes	
Department of Agriculture	3,900
Department of Commerce-NOAA	9,639
Department of Energy	11,065
Department of Health and Human Services	-0-
Department of the Interior	21,307
Department of Transportation	900
Environmental Protection Agency	-0-
National Aeronautics & Space Admin.	1,660
National Science Foundation	2,110
Tennessee Valley Authority	254
U.S. Army-Corps of Engineers	4,095
Water Resources Council	-0-
Total	54,930
II. Hydrological-Ecological Relationships	
Department of Agriculture	3,300
Department of Commerce-NOAA	16,104
Department of Energy	3,530
Department of Health and Human Services	-0-
Department of the Interior	23,892
Department of Transportation	920
Environmental Protection Agency	-0-
National Aeronautics & Space Admin.	240
National Science Foundation	1,410
Tennessee Valley Authority	1,240
U.S. Army-Corps of Engineers	9,770
Water Resources Council	-0-
Total	60,406
III. Water Quality Management & Protection	
Department of Agriculture	10,100
Department of Commerce-NOAA	4,074
Department of Energy	4,005
Department of Health and Human Services	11,701
Department of the Interior	10,200
Department of Transportation	3,190
Environmental Protection Agency	92,400
National Aeronautics & Space Admin.	1,000
National Science Foundation	1,080
Tennessee Valley Authority	2,175
U.S. Army-Corps of Engineers	335
Water Resources Council	-0-
Total	140,260

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Federal Water Resources Research Budget - FY 1981

Research Category and Agencies	(Dollar Amounts in Thousands)
IV. Water Development, Use, Conservation and Management	
Department of Agriculture	34,700
Department of Commerce-NOAA	5,080
Department of Energy	7,250
Department of Health & Human Services	-0-
Department of the Interior	25,486
Department of Transportation	390
Environmental Protection Agency	-0-
National Aeronautics & Space Admin.	1,725
National Science Foundation	-0-
Tennessee Valley Authority	1,496
U.S. Army-Corps of Engineers	16,880
Water Resources Council	-0-
Total	93,007
V. Institutional, Economic and Legal	
Department of Agriculture	1,200
Department of Commerce-NOAA	1,005
Department of Energy	250
Department of Health & Human Services	-0-
Department of the Interior	3,695
Department of Transportation	-0-
Environmental Protection Agency	-0-
National Aeronautics & Space Admin.	-0-
National Science Foundation	-0-
Tennessee Valley Authority	195
U.S. Army-Corps of Engineers	800
Water Resources Council	-0-
Total	7,145
Category Total	355,748

Agency	
Department of Agriculture	53,200
Department of Commerce-NOAA	35,902
Department of Energy	26,100
Department of Health & Human Services	11,701
Department of the Interior	84,580
Department of Transportation	5,400
Environmental Protection Agency	92,400
National Aeronautics & Space Admin.	4,625
National Science Foundation	4,600
Tennessee Valley Authority	5,360
U.S. Army-Corps of Engineers	31,880
Water Resources Council	-0-
Agency Total	355,748

Senator ABDNOR. We put a lot of money into synthetic fuels research, trying to come up with an alternative to oil. I don't think that will come near the problems we will have with water down the road. I don't think this is the time to let up on water research. But maybe we could get some of your thoughts on that. If we get the questions early, could you give us answers by the end of the week?

Mr. BAHR. Sure. I would be happy to.

Senator ABDNOR. Thank you very much, Mr. Bahr. We appreciate your coming here and testifying.

Mr. BAHR. Thank you, Mr. Chairman.

Senator ABDNOR. For the sake of speeding this up, I think I will ask the next three witnesses if they will come to the table together. We can ask questions and hear your testimony. Dr. Steifel, Dr. Allee, and Mr. McGregor, if you gentlemen would come forward, I would appreciate it.

Gentlemen, we welcome you to the panel. We think this is very important legislation. Senate bill 684 doesn't call for all that much money. It has some effect on the $300 million for water research. So we are anxiously waiting to hear from you gentlemen.

Dr. Steifel, why don't you lead off.

Let me say again that, as you know, your entire statements will be made part of the record. Sorry we have to rush this thing along.

STATEMENTS OF ROBERT C. STIEFEL, CHAIRMAN, NATIONAL ASSOCIATION OF WATER INSTITUTE DIRECTORS, AND DAVID ALLEE, CORNELL UNIVERSITY, PRESIDENT, UNIVERSITY COUNCIL ON WATER RESOURCES RESEARCH

Dr. STIEFEL. That is quite all right, Senator. We understand.

Before we begin, I would like to introduce Dr. David Allee from Cornell who will present the initial part of our testimony.

Senator ABDNOR. Welcome back. You were here last year.

Mr. ALLEE. Yes, Senator, I was. I enjoyed that session very much. It is a pleasure to be here with my colleagues from the university community. I hope we can do justice to the fact that the universities provide a good share of the trained manpower that goes into the programs that the various agencies have to solve the problems that the Nation faces.

I think at the heart of any research or technology transfer activity of the kind we are talking about here is the contribution that it makes to the educational enterprise. We believe that lack of trained manpower is a significant element in the problems that we face, and the need to maintain the output and to direct that output is an important part of what this bill is about.

We are very pleased to support the bill. We have reviewed its elements, discussed them at national meetings and task force meetings since you first introduced it, and I might say that at our last university council on water resources meeting last summer in Lake Tahoe we did some dreaming about what an ideal water resources research act would look like. This was one of the places where the need to stress the educational element was discussed in some detail.

I am pleased to say that your bill meets the general requirements. It fits rather well with the things we dreamed about. Of course, these are not times when anybody's dreams get met. So I think we would have to agree that your bill is scaled down to face some of the realities that we know are there in 1983.

Our position, perhaps needless to say, has not always been consistent with the Department's. Even though there are many university people in the various programs and I think we communicate well, our positions are apt to be different. Thus, in the time we have had to review your original bill, we have identified a number of procedural and other kinds of questions that we think can be addressed. But again let me say that the basic framework we think is consistent with what an ideal program would look like.

In the past year people outside of the university community I think have recognized the need for more technically and scientifically trained manpower. I would like to call your attention to a report that the National Association of State Universities and Land Grant Colleges produced on the quality of engineering education. I would like to leave a copy for your committee staff's reference.

Senator ABDNOR. Fine. Would you like to have it made a part of the record?

Mr. ALLEE. I think you may want to explore it and just use it for a research piece.

Senator ABDNOR. We will put it in the committee file.

Mr. ALLEE. Good. I appreciate that very much.

It does include a lot of data to demonstrate the problems that we have been having in trying to generate enough trained manpower in the scientific and engineering area.

We think there is a particular problem on the water side because this is not a glamour field, and so the need to direct students and training programs in the water direction we think is quite high. The salaries are often not there, so the market for manpower does not necessarily work very well.

We have suggested some language to place in several of the sections that we think will strengthen the indication of commitment to the educational activity. I commend these for your perusal.

We have also addressed the question of the size of the funding that should be addressed, trying to match the task to the capabilities. We have included for your consideration some documentation of a program level of around $40 million per year. We think, frankly, that level of program can be defended in considerable detail based upon a joint Federal Government-university process of identifying research needs and priorities. However, this basis is several years old. That priority-setting process has not been energized in some while. We think that jumping to any level of that size would be dangerous, that it would pay to grow steadily and securely with adequate review, adequate planning, up to some sort of a level that perhaps in 5 years might reach $25 million, starting with, say, the $13 million figure that you have in your bill.

The notes that are attached to my testimony that indicate how a $40 million level would be spent between the different categories that have been used in setting priorities for water research, those notes were prepared by James Warman from Alabama. We can

provide the committee with more detail upon the bases those numbers were obtained.

I would like to close off my discussion with a couple of points. One is to reemphasize this notion of a commitment year after year. This is essentially a question of quality. If you have a program that you know is going to be supported several years in a row, we are suggesting at least 5, faculty can plan on it, students can plan on it, and you can expect to get the better students and the better faculty attracted to your problems. The problems of water are sufficient to require that kind of attention, we think, and to get the best of the kinds of people that are there in the process and to attract projects that are the best that we can develop. You can't do that with a high level of uncertainty and where from week to week as the year progresses you are still now sure what the funding will be. So let me underscore the need to make a definite commitment and to move ahead with it.

Let me also close with some points on cost-sharing, particularly in the area of demonstration projects. As you will recall, your bill contains a reference to the need to vary cost sharing in some cases in the area of basic projects, for basic research. I think the same need applies to the area of demonstration technology and development kinds of projects. I think a simple paragraph tailored after the one you have now in the area of basic research would fit the demonstration project need.

With that, I would like to ask Bob Stiefel to discuss a couple of points that we think will improve and strengthen the administrative elements of the program, again directing toward the development of a quality program that concentrates the sorts of multidisciplinary resources that we think the universities have available to them and does that in an administratively effective way.

Senator ABDNOR. Before we leave you, you might expand a little bit on what you said in a written answer on the funding and the breakdown. Also, before we leave you, after we hear from the others, maybe you can give us your thoughts on the testimony of Mr. Bahr about the duplication and maybe the need really for our type of legislation that we are proposing here. I will do that when we are through with the testimony. But I want you to be giving it some thought. Mr. Bahr felt that the $300 million is going too far. Do you feel we have a lot of duplication in this for research? You think about that and I will ask you to comment on that when we get through hearing from Dr. Stiefel.

Dr. STIEFEL. Thank you very much, Senator.

Senator, we do obviously not agree completely with the Department of the Interior's position on the need for water-related research, particularly on the help of the Federal Government in carrying out these programs, even though they are done at the State level. We, therefore, suggest that perhaps your legislation be modified slightly to include some type of development of the types of problems that we should do in the area of water resources.

Our feeling is that this can best be developed at the State levels, to identify these problems perhaps, then brought up to a regional perspective where we can discuss those amongst the states within a region to define regional priorities; and then, hopefully with the cooperation of the Department of the Interior and some other people

in Washington, to develop a national program. Our research would be directed at meeting those national needs.

We do feel that the Federal Government has a role in this process, a very serious role, because water is not an issue that is unique to the States; but water use prevails throughout the entire country. Certainly, we have some major water problems that are national. We have other problems that are regional. So we would definitely feel there should be an involvement of Interior and the Federal Government in this type of research.

Senator ABDNOR. In other words, a great deal of the research is really beneficial to the whole country, not just to a locality.

Dr. STIEFEL. Very obviously. The Secretary himself has indicated he is predicting water crises within the next decade, and yet we see him backing off from supporting water-related research which could conceivably help in overcoming some of those problems. But we feel those problems have to be identified at the local level and then brought forth, kind of a grassroots effort, to define exactly what those problems are. We would feel that legislation directing the Secretary to do those types of activities would be most beneficial to the program as well as to the Nation.

As you now know, the old program, the Office of Water Research and Technology program, has recently been subdivided among several groups in Interior. We deal with the Office of Water Policy, with the Bureau of Reclamation, and the U.S. Geological Survey.

The Office of Water Policy has not received the support of the Secretary. His office has not requested funds for it in 1984. We feel that this discontinuity in the program, where the institutes and the universities do not know whether they have a program or where it will be housed or how it will be administered certainly is interfering with the quality of the research we can accomplish. We, therefore, suggest that perhaps this committee and your legislation might look at a more permanent home for us within Interior. The U.S. Geological Survey, obviously, has some research capabilities. We would suggest perhaps we be attached to something in that area. The Bureau of Reclamation is, of course, another strong group we might wish you to consider. So those are two of the major areas.

The third thing we are concerned about is the program that we have with the 54 institutes has been criticized at various levels. We would like to provide mechanisms if possible, to strengthen in fact those institutes and also to create a better image for the program. If we are going to have more State responsibility in terms of funding to these programs, we would certainly need some type of legislation to direct the institutes to secure that type of funding. In order to do that, of course, we have to come up with a very strong, positive image of that group. Therefore, we strongly urge that this subcommittee incorporate language that will require some evaluation of the existing institutes, perhaps site visits, by a representative group of people who can speak to all aspects of the program; representatives from Interior, from the State agencies that support our programs, from our host universities, from our peers.

We recognize that this is difficult to cast in legislative form, but we would certainly appreciate anything you can do to help get an evaluation of the existing institutes with an effort of strengthening

them. We feel that a peer review process on our research would eliminate any possibility of duplication so that that should not be a valid criticism of the program any longer.

We do feel that some set of criteria, however, has to be developed for this evaluation. We would suggest that this peer review group that is developed, if one is, set the criteria for the institutes and that each of us be compared against that set of established criteria. This way we feel we can present a better picture of the efforts and work we are accomplishing.

We would be happy to answer any of your questions.

Senator ABDNOR. Did you ever propose that? Was that proposal made last year by this peer group?

Dr. STIEFEL. Not to evaluate the institutes. There are existing words in the legislation that say that the Secretary should determine the quality of the institutes. But we have obviously not had that type of support, so we are asking for it in legislative form now. A little bit more direction, if you will.

Senator ABDNOR. If you have that group reviewing the various institutes, they would probably do a better job improving themselves.

Dr. STIEFEL. Well, it works in a unique way. We are all part of universities and frequently it takes an outside group to come in to tell the university exactly the quality you have existing. We are trying to raise the image of our own campuses in one way and thereby strengthen the program.

Senator ABDNOR. I guess you have that in higher education and accreditation of your different departments, right?

Dr. STIEFEL. Yes. But, you see, we are not an education department so we do not fall under accreditation procedures. Essentially what we are asking for is an accreditation.

Senator ABDNOR. I have a crisis here. I am being called over to the conference for my section of the bill. I could ask you to stay. I don't know whether it would be 20 minutes, 30 minutes or 40 minutes. We don't normally do this. We are hoping that someone will arrive here in a few minutes. Hal Brayman is the chief counsel to this group. I feel very comfortable that he could carry on and save everyone coming back if we get to that point. I hope to be able to return myself. We think one of the members of the committee may be on his way. If I am not back, I will ask Hal to resume the hearings and carry on. I hope you don't mind. I hope you understand.

Dr. STIEFEL. Certainly, Mr. Chairman.

Senator ABDNOR. So as I said, I know we will have questions to submit to all of you, which I feel will offset some of the problems we are creating here. So if you don't mind, I will just briefly recess to see if our other member is on the way over. If he doesn't come immediately, I am going to ask Mr. Brayman to continue on. Thank you very much.

Dr. STIEFEL. Thank you very much, Senator.

[Brief recess.]

Mr. BRAYMAN. The subcommittee will return to order.

It is with great reluctance that the staff does this. This is very abnormal. But with some members of the subcommittee on airplanes and some in the jobs conference and some on the floor with

social security, I hope you will understand that it is a bad time and not a reflection on their interest in this legislation.

Let me just say that the staff does not intend to give a speech but that the staff will have some questions that Senator Abdnor left for us to ask. I guess we will ask Mr. McGregor to see if he wants to say anything at this point. Thank you.

STATEMENT OF RUSSELL C. McGREGOR, DIRECTOR, GOVERNMENTAL RELATIONS, NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND GRANT COLLEGES

Mr. McGREGOR. Mr. Chairman, I would like to just make two simple points. First of all, I think it is tragic that the Department of the Interior apparently does not recognize that in dealing with this important resource it is necessary to have the cooperation of the States, the universities, the Federal Government, and the State government.

This system has worked very well for us. To suggest that the Federal Government should not be a partner in this, when indeed the Federal Government is a major resource owner in the West, strikes me as a rather tragic situation.

My second point, Mr. Chairman, is I must say I am dismayed at another failure on the part of the witness from the Department who made no mention of the educational importance of this program.

To cite again this report, the fact is that the country has a crisis in the quality of its engineering education. This program makes a contribution to that overall effort and therefore should be sustained. This is not the moment to be doing away with these kinds of supportive programs when engineering education and research is such an important interaction.

Mr. BRAYMAN. Thank you.

Let me ask each of you a question that Senator Abdnor left to be asked. Can you discuss, please, the question of whether this legislation will lead to a more effective program than the perpetuation of the existing law under a year-by-year appropriation? In other words, how can the taxpayer be better served under passage of S. 684 compared with a perpetuation of last-minute appropriations for a program such as the one that is already in law?

Do any of you wish to answer that?

Dr. STIEFEL. Mr. Brayman, I will try to attempt to answer that.

Under the current annual appropriation, we have not yet begun the program for fiscal 1983 which we are currently almost halfway through. The funds will be made available to the institutes probably sometime late in June, and most of our project work will not get started until later this summer. Essentially, therefore, we have lost one 1 year of research because the 1982 funds are finished and we are looking forward to the 1983 funds, but they are basically going to be spent during 1984. So we have lost 1 year of research in the program.

We have had no continuity in that regard and we cannot maintain graduate students, postgraduates, and so forth working in this area. So we have suffered so far already in this area. If this continues much longer, we will be faced with a serious problem. We

really need some stability in this program. With the stability I think you will see the quality of the research increase dramatically.

Mr. ALLEE. I think the business of planning and priority-setting we sometimes forget just what it is about. Part of it is education, where we come to some kind of agreement or consensus about what is important and then we can respond to that. But we respond to it in part because a lot of the people who are going to respond get educated in that planning process and work out cooperative arrangements.

I flew down this morning with a colleague, and he had to point out partway through the conversation that he didn't get his paycheck from Cornell, he got it from the Boyce Thompson Institute for Biological Research, which happens to be located on the Cornell campus. It is not an accident. It is because there is a symbionic relationship between that private organization, the publicly supported units on our campus, and the private units on our campus. That sort of cooperation takes time. If you are responding to sort of last-minute notions about a few dollars being available, you haven't got the time to develop those kinds of meaningful relationships.

Mr. BRAYMAN. Mr. McGregor.

Mr. MCGREGOR. No additional comment.

Mr. BRAYMAN. Can you discuss briefly why there has been such a delay, even though the appropriation was made in December, why there has been a delay and when you expect that delay to be broken?

Dr. STIEFEL. Well, the appropriation was made in December, as you point out. Interior I think viewed this as a new program, at least now with a new office, the Office of Water Policy, and the need was apparently felt to develop new guidelines for that Office compared with the old OWRT program.

We did not seriously get involved with that office until mid-February. Guidelines are still on their way, although the institutes have sent out requests for proposals for next year, or this year. Most of the institutes have mailed those out. So we expect proposals back sometime in April. By the time we review them, subject them to peer review on our own campuses and then subsequently a regional review, it is going to be late in June before we actually get a proposal into the Office of Water Policy for their approval. Subsequently, we are not going to have anything funded until at least mid-June or later. I think it was, basically, because we could never exactly count on the money, count on the support until Congress gave it to us.

Mr. BRAYMAN. In other words, what you are saying is that with a program of continuity, you are going to get a lot more for your buck.

Dr. STIEFEL. Certainly, very obvious. But we are just at a position where we are so busy chasing our fires right now on this particular problem we just don't have time to sit down and plan an effective program.

Mr. BRAYMAN. Thank you very much, gentlemen.

Senator Baucus, who had hoped to be here, has a statement for the record that Senator Abdnor asked me to have included.

[The statement follows:]

19-868 O—83——3

STATEMENT OF SENATOR MAX BAUCUS
"THE WATER RESOURCES RESEARCH ACT OF 1983"
SUBCOMMITTEE ON WATER RESOURCES
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
MARCH 21, 1983

MR. CHAIRMAN, I AM EXTREMELY GRATEFUL TO YOU FOR SCHEDULING TODAY'S HEARING AND FOR YOUR SPONSORSHIP OF S. 684, THE WATER RESOURCES RESEARCH ACT OF 1983.

THE OLD SAYING THAT "KNOWLEDGE IS POWER" IS ESPECIALLY APPROPRIATE WHEN IT COMES TO WATER. AN ADEQUATE SUPPLY OF GOOD QUALITY WATER IS ABSOLUTELY CRITICAL TO ECONOMIC PROSPERITY FOR THE NATION. EVERY SEGMENT OF THE NATIONAL ECONOMY DEMANDS A RELIABLE SUPPLY OF WATER WHETHER IT IS FOR IRRIGATION, ENERGY PRODUCTION OR MANUFACTURING.

WITH THIS IN MIND, IT IS A SHOCK TO MANY TO LEARN THAT NATIONWIDE WE SPEND LESS THAN $400 MILLION ANNUALLY FOR WATER RESEARCH AND DEVELOPMENT. OF THAT AMOUNT, ONLY A TRICKLE IS FOR BASIC SCIENTIFIC RESEARCH THAT LOOKS TOWARD THE FUTURE.

THIS IS NOT A WILD-EYED IVORY-TOWER PROGRAM. THE ACT ENSURES SUPPORT FOR STUDIES DESIGNED:

- TO GUARANTEE SUFFICIENT WATER QUANTITY AND QUALITY TO MEET THE NATION'S NEEDS;
- TO PROMOTE THE RECLAMATION OF WASTE WATER AND TO CONVERT SALINE AND IMPAIRED WATER TO BENEFICIAL USES;
- AND TO IDENTIFY PREVENTATIVE MEASURES DEALING WITH IMPAIRED WATER.

WATER RESEARCH INSTITUTES LOCATED AT LAND GRANT COLLEGES ARE PARTICULARLY WELL SUITED TO CARRY ON THIS IMPORTANT RESEARCH. BY

WORKING WITH OTHER MEMBERS OF THE UNIVERSITY COMMUNITY, WATER RESEARCHERS ARE ABLE TO TARGET PROBLEMS THAT HAVE BROAD IMPACTS ON THE STATES THAT THEY SERVE.

I HAVE VISITED THE WATER RESEARCH INSTITUTE LOCATED AT MONTANA STATE UNIVERSITY IN BOZEMAN. THE RESEARCH AND DEVELOPMENT ACTIVITIES BEING CARRIED ON THERE ARE INVALUABLE TO THE EFFICIENT MANAGEMENT OF AN INCREASINGLY PRECIOUS COMMODITY IN MONTANA -- WATER.

NATURALLY WE ARE OBLIGATED TO LOOK CAREFULLY AT EVERY EXPENDITURE THESE DAYS. IN MY OWN MIND, I AM CONVINCED THAT THE LONG-TERM RETURN ON BASIC WATER RESEARCH MAKES IT AN EXCELLENT INVESTMENT. HOWEVER, I LOOK FORWARD TO HEARING THE TESTIMONY OF TODAY'S WITNESSES TO DETERMINE WHETHER THE $8 MILLION ANNUAL AUTHORIZATION FOR THE WATER INSTITUTES IS SUFFICIENT. IN ADDITION, I AM INTERESTED IN THE WITNESSES' REACTION TO THE DECLINING FEDERAL CONTRIBUTION BEING PROPOSED IN THIS LEGISLATION.

THANK YOU.

Mr. BRAYMAN. I again apologize to you all for today's conflicts, but thank you very much.

Mr. STIEFEL. We appreciate your time very much.

Mr. BRAYMAN. The final witness is Mr. Neil Cline, manager of the Orange County, Calif., Water District, on behalf of the Water Supply Improvement Association.

Once again, Mr. Cline, I apologize to you and I hope you understand the unusual circumstances. Please proceed. Your whole statement will be included in the record.

STATEMENT OF NEIL CLINE, MANAGER, ORANGE COUNTY, CALIF., WATER DISTRICT, WATER SUPPLY IMPROVEMENT ASSOCIATION, ACCOMPANIED BY JACK C. JORGENSEN, WATER SUPPLY IMPROVEMENT ASSOCIATION'S LEGISLATIVE REVIEW COMMITTEE

Mr. CLINE. Mr. Brayman, for the record, I would like to introduce Mr. Jack Jorgensen, who is with the Water Supply Improvement Association's Legislative Review Committee.

I certainly would add we understand the exigencies of the circumstances. We are just pleased to be a part of the program and thank you for the opportunity to make a comment on Senate bill 684 authorizing Federal support for water resources research.

I am secretary-manager of the Orange County Water District in Orange County, Calif. I also serve on the board of directors of the Water Supply Improvement Association.

Our association is composed of a number of representatives from local and State governments, from Florida to California. We also include inventors and researchers, engineers, and equipment suppliers who share the common views on the importance of technical solutions to water supply problems and on the value and necessity for the continuing Federal research and development programs to assist in these matters.

Our group is particularly interested in the applied research and development activity as described in your bill which we would describe as new water sciences. We submit our strong support for this measure and urge its passage.

We do not agree with the Department of the Interior's representative this afternoon that the States and industry can proceed with the research. It will not happen without some Federal assistance.

In our written statement we have suggested several minor adjustments that we think would provide a broader application of the program that we feel would be appropriate. Briefly, we would like to see some provisions for contract work be included in section 5, the contract work as described in the old Public Law 95-467, so that this effort be just not limited to groups. It would be easier in its implementation.

We certainly support local cost-sharing. As a representative of a local agency, it is my view that it is not unreasonable to require a significant share of the costs to be borne by the local beneficiaries of the project. However, frequently the costs of the research exceed the ability of local agencies to pay. When national benefits accrue, it seems there should be some Federal assistance in these programs.

Lastly, on behalf of the Water Supply Improvement Association and my district, we would urge consideration be given to increasing the appropriation for this important work to $20 million and that the administrative costs of the program be clearly divided between the university institutes program and the new water sciences programs that we advocate.

As presently structured, the bill appears to be weighted toward the institute work. While we agree that these efforts are essential, no question about that, we also feel that the applied research activities of local governments and individuals are equally as important.

The water community, by necessity, is extremely conservative and reluctant to change water service methods. Without the bridge between research and application, you need some kind of applied research that we advocate. Municipal agencies just don't change their operating procedures.

Thank you.

Mr. BRAYMAN. Thank you very much.

Let me just ask you a couple questions. Senator Abdnor may have some questions for the record.

I gather you believe there is a justification for adoption of legislation such as S. 684.

Mr. CLINE. We certainly support it, yes.

Mr. BRAYMAN. The second thing is could you explain to me briefly, I know your testimony discusses it, but you discussed the contract new water sciences part of the total program in the U.S. Bureau of Reclamation. The witnesses from the universities talked about the possibility that instead of the Bureau, it would go into USGS. If this committee did put the program in USGS, would you feel it would have a good home?

Mr. CLINE. I am really not prepared to react to it. We were delighted when this research effort was apparently settling in the Bureau of Reclamation, which has a history and a tradition of getting things done, and we don't find any fault with it staying there. That is my reaction to that.

The Geological Survey is also an accomplished agency and has done some nice things in research. We just feel it does need strong administrative support and it does require a big staff. It just needs to be adequately funded so that the institutes and the local agencies will have the Federal assistance to accomplish what we think are very vital programs.

Do you have anything to say?

Mr. JORGENSEN. I think when we speak of this so-called contract work, we are really trying to pick up the whole context of the old legislation, title II, which includes more than just the whole gamut, with applied and basic research there, too. But assigning it to an action type agency, we tend to think that the more advanced applied research part of the program would have a better chance of being administered to in essence deliver in the real world of water sciences.

Mr. BRAYMAN. Thank you very much. Again, on behalf of Senator Abdnor, I apologize to you. I can assure you that the testimony is going to be distilled and presented to each of the members of the subcommittee.

Senator Abdnor has said in the past, and I assume that will come true, that shortly after the recess he expects to begin to move this legislation. So we appreciate very much your kindness in coming. I again apologize for the inconvenience of not having more members present. Thank you.

The hearing is adjourned.

[Whereupon, at 3 p.m., the subcommittee was recessed, to reconvene subject to the call of the Chair.]

[Statements supplied for the record, responses to written questions, and the bill S. 684 follow:]

STATEMENT OF DR. THOMAS G. BAHR
DIRECTOR, OFFICE OF WATER POLICY
U.S. DEPARTMENT OF INTERIOR
BEFORE THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON WATER RESOURCES
March 21, 1983

Mr. Chairman, Members of the Committee:

I am pleased to have the opportunity to discuss with you the Administration's position on S. 684, the "Water Resources Research Act of 1983." This bill, except for one year postponement of selected dates, appears identical to S. 2494 passed by the Senate in June 1982.

Last May, Assistant Secretary Garrey E. Carruthers informed you by letter that the Department opposed S. 2494. We now oppose its successor, S. 684, because the principal benefactors of this legislation, the States and industry, have responsibility to finance the research needed in support of their water resources management or planning roles.

Public Law 95-467, the "Water Research and Development Act of 1978" and its predecessor, Public Law 88-379, the "Water Resources Research Act of 1964," authorized a process for use of Federal funds to stimulate research among States and industry to solve common problems. In the 20-year history of this program, the States have acquired much information useful in water planning, policy making and management. The time has come, however, for States and industry to now take the lead responsibility for financing the research that will benefit them.

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The President's budget emphasizes selective reductions in use of Federal funds for purposes that are more appropriately financed by others. Throughout history, this program has only been a minor part of Federally funded water research. Federal salinity research sponsored by this program has progressed to the point that private sector alternatives are now feasible without direct federal support. The more productive institutes have been able to generate substantial funding from other sources and are no longer dependent on funds which would be provided by this legislation.

We therefore oppose enactment of this legislation.

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AMENDMENTS TO THE PROPOSED
WATER RESOURCES RESEARCH ACT OF 1983

COMMENTS
BY
DAVID J. ALLEE, PRESIDENT
UNIVERSITIES COUNCIL ON WATER RESOURCES
MEMBER OF THE WATER RESOURCES COMMITTEE, NASULGC
PROFESSOR OF RESOURCE ECONOMICS
CORNELL UNIVERSITY
ITHACA, NY 14853

Senator Abdnor and colleagues, it is again a priviledge and a pleasure to join with the National Association of Water Institute Directors and the National Association of State Universities and Land Grant Colleges to present the university point of view to you. I hope that we can do justice to the important role that universities can and do play in solving the nation's water problems. Universities are the source for most of the training that leads to the expertise that the various agencies need to solve these problems. At the heart of any program to support university capacity to address water problems--even if it is support for research or technology transfer--is the business of education. We are in that business--the lack of trained manpower is significant--and thus we are very pleased to support S.684. It promises to provide the steady support for the educational enterprise in water resources. Without the federal support implied our programs would be under-financed, less coordinated and focused, less responsive to regional and national needs than without this partnership approach. The greatest part of the support for a university water resources response will still be from state and private sources. But a good measure of support by the Federal government will produce a coordinated national response to these many local and regional needs.

Since this bill was first introduced and passed by the Senate last year we have had an opportunity to reflect on its various features. At the UCOWR annual meeting at Lake Tahoe last summer we discussed the elements that would make up the ideal Federal-state water research program. These are not times in which anyone's ideals can be achieved, if such times ever exist. I'm pleased to say, however, that the basic framework of S.684 is consistent with the elements of an ideal program scaled to the realities of today. Thus my presentation will be largely in support of its basic concepts with amendments offered to clarify some of the processes and procedures that are involved. In large part, the need for these became clear only in the last year.

Strengthen the Emphasis on Education

In the past year it has become clear that the nation is recognizing a shortage in technically and scientifically trained manpower. We are not training enough engineers and scientists well enough overall, and the water resources specialities are particularly in short supply because they do not command the salaries available in the glamor fields. A program of research and technology transfer is a very compatible and efficient way to support the educational enterprise. The typical matching grant research project can train about one engineer or scientist for each twenty to forty thousand dollars of support. And this is a by-product of the basic objective. With employment in research, simply encouraging a particularly needed specialization, it takes advantage of the basic investments in that educational enterprise made by the individual, the university and often the states.

Thus we suggest the following added language. First, in Section 2(f) we suggest it read "the Nation must provide programs to strengthen research

and associated graduate education because the pool of scientists, . . ." Second, a part (e) be added to Section 3 to read, "Promote the development of a cadre of trained research scientists, engineers and technicians for future water resource problems." Third, Section 5(a)(1) should have the following sentence added at the end, "This research should to the extent possible utilize the best qualified graduate students so the Nation profits from the education and training benefits resulting from the use of the latest technological developments in solving water problems." Fourth, Section 5(b) should have the word "engineers" added after "training of water resources scientists," and the following added at the end "and the extent to which it will result in training of water resources scientists and engineers."

Total Authorized Funding Should Match the Task and the Capabilities

Section 5(c) authorizes $13 million for dollar-for-dollar matching grants to institutes and any other competent research organization including the non-institute universities which make up almost half of the university programs that are members of UCOWR. We believe that the regional and national research priority setting process organized by the Department and the Institutes has provided a basis for supporting some $40 million per year in research, independent of technology development needs. However, we recognize several realities. First, the current stringent limits on the Federal budget suggest a lower figure--the $13 million level is realistic for this year. Second, the basis for the $40 million is a process several years old. Third, funds are more effectively spent if there is gradual, reliable growth that takes place in the context of careful planning and monitoring. See the attached notes on the basis for the $40 million per year estimate.

Thus we suggest that Section 5(c) authorize $13 million for the first year and up to $25 million for each subsequent year to the fifth year of the authorization by the Act, with a new requirement in section 5(a)(1) that the Secretary, in consultation with the universities and the states, submit a plan for the expansion, in steps, of this program from the $13 million to the $25 million level.

Cost Sharing for Demonstration Projects

Just as it is true for some basic research projects, cost sharing can be a problem for some technology development projects. The risk of failure is high--too high for short run calculations by private parties and local governments--but the promise for new knowledge and understanding may be high. The second generation prototype may have every chance of financial self-sufficiency. To deal with this, I urge you to consider a new Section 5(a)(4).

In cases where the Secretary determines, according to criteria established by him, that a grant under this section is for a demonstration project which is necessary to determine the practicality of a concept which would not otherwise be undertaken, the Secretary may approve grants under this section on a matching requirement other than that specified in paragraph (1) of this subsection.

National and Regional Priority Setting and Project Peer Review

We believe that quality research depends upon a well organized project peer review process as well as major emphasis on competitive grants. And research projects that really add up the many pieces of new knowledge needed for solutions of a major water problem require careful priority

setting at both the national and regional level. Such priority setting must link researcher with user and the technology transfer delivery system. Thus we propose a new Section 5(a)(3).

The Secretary shall determine national and regional priorities for problem areas to be addressed by the research under this section. Each state institute, after consultation with representatives of state and federal agencies and other potential users of research results, will develop a statement of state priority problems. These will be combined into regional statements by regional consortia of state institutes, and combined into a national statement as the Secretary determines. The Secretary shall divid funds appropriated for this section between grants that address national priorities and grant that address the problems of regional priority. The Secretary shall assure that all applications under this section are directed toward to national and regional priorities and that they undergo a peer review process to assure that the research is of the highest quality. Both regional and national priorities shall give due consideration to the needs for training of water resources scientists and engineers.

Where Should the Home for the Program Be?

The old program has been divided between the U.S. Geological Survey, the Bureau of Reclamation and the new Office for Water Policy. Each of these need an improved linkage to the University water community. But for the long run development of this relationship, we urge the committee to consider the advantages of primary linkage with a stable, sympathetic, largely research organization. The Water Division of the USGC obviously qualifies. The Bureau of Reclamation may have potential for a national research program that has not yet been articulated. We urge further study of this question.

ATTACHMENT TO TESTIMONY OF DR. DAVID ALLEE - March 21, 1983

The National Research Council, Commission on Natural Resources has defined five categories of water resources research, as follows:

I. Atmospheric, Hydrologic and Hydraulic Processes

II. Ecological-Environmental Relationships in Water Resources

III. Water Quality Processes, Prediction and Protection

IV. Water Resources Management

V. Institutional, Political, Legal, Behavioral, and Economic Analysis

The directors of the Water Research Institute have developed research plans for each of the five categories. These plans include badly needed investigation for each of the major water research regions. The following table outlines the investment required within each of the NRC categories.

Required Investment in Water Resources Research

	Category	Investment (millions of dollars)	Percent
I.	Processes	$ 7.3	18%
II.	Environment	7.2	18
III.	Quality	9.0	23
IV.	Management	9.6	24
V.	Institutional	6.9	17
	TOTAL	$40.0	100%

If the country is to make effective use of its limited water resources to help foster economic growth these investments need to be implemented without delay.

AMENDMENTS TO THE PROPOSED
WATER RESOURCES RESEARCH ACT OF 1983

COMMENTS
BY
ROBERT C. STIEFEL
CHAIRMAN, NATIONAL ASSOCIATION OF WATER INSTITUTE DIRECTORS
MEMBER OF THE WATER RESOURCES COMMITTEE, NASULGC
PROFESSOR OF CIVIL ENGINEERING
OHIO STATE UNIVERSITY

In order to provide a uniform mechanism to strengthen the position of some of the existing institutes at their host universities and in their home states, and to improve the operation of some others, we strongly urge the Subcommittee to incorporate language into this bill to require that periodic site visits and critical evaluation be made at all of the institutes by an external review committee. This panel should include representatives of the U.S. Department of the Interior, state water resources agency personnel, directors from other water resources research institutes and university administrators and faculty, among others.

The review committee should evaluate each institute based upon a well-developed set of criteria and should report their findings to the Secretary of Interior and to the host universities. The Secretary should be required to withhold federal support from any institute which does not meet the criteria for the evaluation until the institute can demonstrate to the Secretary's satisfaction that it can again comply completely with the program's goals and objectives.

It is our opinion that this type of evaluation will result in an enhanced position for the institutes within their states, will strengthen the role of the institutes within their host universities and will result in a much improved program of water resources research throughout the nation.

Testimony of Mr. Neil Cline, Manager of the Orange County Water District, Fountain Valley, California on behalf of the Water Supply Improvement Association before the Senate Committee on Environment and Public Works, Subcommittee on Water Resources, S. 684, a Program of Water Resources Research.

March 21, 1983

Dear Mr. Chairman:

I am happy to appear before you again in support of your bill to continue a program of water resources research. As you know, my Orange County Water District has long been the beneficiary of new water sciences developed from the Federal research program. I am happy to report that our "Water Factory" in Orange County is a success story and showcase. It demonstrates how the Federal research and development dollar, coupled with the innovative approaches utilized by our district can help solve the many existing and developing vexing water problems of our nation. We experience a growing stream of visitors to our facility from almost every section of the United States and for that matter, many countries around the world. This has not been done totally at the Federal government's expense, but with substantial cost sharing by the local taxpayers in our District. We have a continuing research and development program and intend to share the results with others, but we firmly believe local agencies should not be required to bear the full burden of the required R & D costs when extensive national and international benefits accrue.

The Water Supply Improvement Association consists of representatives from a number of local and state governmental entities, inventors, researchers, engineers and equipment suppliers who share views on the value and necessity for continuing Federal research and development in the new water sciences. Our organization is particularly interested in the applied research and development activity generated by Section 5 of your bill. Past experience has demonstrated that private business and individual researchers have been especially productive in producing results that are applicable in the real world. As written, section 5 would be limited to the use of grants. In many instances past experience in the program has found that <u>contracts</u> are most expedient Therefore, we feel that it would be helpful to add <u>contracts</u> to the wording where appropriate. Also, there are several places that use the term "research" by itself. We have found that before pure basic research can be made useful in real world situations there is required

a considerable amount of "development" work. Therefore we suggest that the development phase be added as a program purpose. This would apply in both Section 5 and 6. We endorse the concept of cost sharing, but feel that the dollar for dollar formula given in Section 5 is too restrictive. This could discourage some of the more innovative and useful inventors and researchers, who may be unable to command that much of a dollar contribution. We believe a more flexible approach would be better with "in kind" effort and expenses credited to the contribution. The flexible approach could be determined by the program administrator. Another idea for consideration is to include a requirement that each research and development proposal generated by the program, include an endorsement of a Federal, State, or local governmental agency; or a recognized equipment manufacturer or supplier; stating a potential use of the claimed results and willingness to participate in some way in the project.

One last, but important point concerns the program dollar authorization level given in Section 6. I must report that our organization is pleased with the assignment of the Contract New Water Sciences part of the total program to the U. S. Bureau of Reclamation. It is a healthy sign that program administrators will produce results which will be useful to water users in need of new innovative techniques for solving water problems. We support Commissioner Broadbent in this new assignment and believe it will offer an opportunity for the Bureau to enter the National water program picture and shed its seventeen Western State image. However, to perform efficiently on a National scale, the program dollar authorization should be raised to at least $20 M. Along with that change, the dollar authorization for program administration should be separated into two parts, one covering the University grant program and the other covering the New Water Sciences Contract Program. In all likelihood the two programs will be administered as separate programs within Interior, and should be treated that way within your bill. However, there should be a strong continuing effort to correlate and coordinate the activity to insure basic research results of the University Program can be adopted and pursued further into the applied research and development program of the New Water Sciences Section.

Mr. Chairman, that concludes my statement and I wish to offer my services, that of the Orange County Water District and that of the Water Supply IMprovement Association to assist in any way possible in the passage of this most important legislation.

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INTERSTATE CONFERENCE
ICWP
ON WATER PROBLEMS

March 24, 1983

Honorable James Abdnor
Chairman, Subcommittee on Water Resources
Committee on Environment and Public Works
U. S. Senate
Washington, D.C. 20510

Dear Senator Abdnor:

I am writing on behalf of the Interstate Conference on Water Problems to express our support for enactment of S.684, the Water Resources Research Act of 1983. This legislation authorizes a five-year program of matching Federal grants to public water research institutes in each State, as well as a system of research grants. S.684 will allow the important function of ongoing research on complex water issues to continue, with an emphasis on working through and with the states.

ICWP is an independent national organization of State, interstate, and intrastate water officials concerned with the full range of water policy and management issues. ICWP strongly supports the need for Federal-State involvement in water resources research. Such research has greatly contributed to the wealth of knowledge and technological strength of the Nation. ICWP urges continued Congressional support for Federal-State water resources research, development, training, and technology transfer as conducted by the U.S. Office of Water Research and Technology and the State water research institutes.

ICWP recognizes, however, that reforms and improvements in the Federal water resources research program are needed. Federally supported water research must be approached according to priority needs. Sufficient funds must be available in order to adequately address the most urgent high priority issues. These priority issues should be selected from a range of State, regional, and national concerns.

We request that this statement be included for the record in support of S.684.

Sincerely,

Joan M. Kovalic
Executive Director/General Counsel

cc: H. Brayman
T. Skirbunt
ICWP Board of Directors

1919 Pennsylvania Avenue, N.W., Suite 300 Washington, D.C. 20006
Telephone: (202) 466-7287

NACD

March 18, 1983

The Honorable James Abdnor
Chairman, Subcommittee on Water Resources
Committee on Environment and Public Works
U.S. Senate
Washington, DC 20510

Dear Senator Abdnor:

The National Association of Conservation Districts (NACD) wishes to support the passage of S.684, the Water Resources Research Act of 1983. We respectfully request that this letter be entered as a STATEMENT FOR THE RECORD for the hearing scheduled on March 21, 1983 on this bill.

NACD represents the nearly 3000 soil and water conservation districts and their state associations in the fifty states, Puerto Rico, the Virgin Islands and the District of Columbia. Conservation districts are responsible under state law for developing and carrying out programs of soil erosion, water resource protection and development at the local level. There are over 2 1/2 million cooperating landowners and operators involved in conservation district programs.

The water resources research institutes have provided a service to this nation which is not necessarily obvious from the legislation. That is in the field of education and training as part of the research process. Many advanced degrees have been earned through research work at the water resources research institutes. These persons are the water resource professionals of tomorrow in state and federal government as well as in the private sector. This activity alone is justification for the expenditure.

The only criticisms which we have heard about this research program is the occasional lack of responsiveness to state government priorities. The proposed declining federal match proposed in Section 4(d) of S.684 should tend to remedy this criticism. As states assume an increasing share of the costs involved, the institutes will, of necessity, become more responsive to state priorities.

It is our understanding that the U.S. Department of the Interior may appear in opposition to this bill. For a federal department which is concerned with the proper conservation and development of the nation's water resources, this seems inconsistent. However, if Interior does not want the program administration, we recommend that it be transferred to the U.S. Department of Agriculture to administer. Agriculture has many ties to the land grant college system and could manage the program effectively.

National Association of Conservation Districts
Rm. 730, 1025 Vermont Ave., N.W., Washington, DC 20005
Phone (202) 347-5995

Mr. Chairman, this association supports the concepts of S.684 and urges the subcommittee to recommend passage of this bill. You and the entire subcommittee are to be commended for your efforts over the years to promote sound water resources programs for the nation.

Sincerely,

Charles L Boothby

Charles L. Boothby
Executive Secretary

NATIONAL WILDLIFE FEDERATION
1412 Sixteenth Street, N.W., Washington, D.C. 20036 202—797-6800

March 21, 1983

Honorable James Abdnor, Chairman
Subcommittee on Water Resources, Senate
Committee on Environment and Public Works
Senate Office Building
Washington, D.C. 20510

Dear Mr. Chairman:

Please include this letter in the official hearing record on S. 684, the "Water Resources Research Act of 1983."

The National Wildlife Federation strongly supports the purposes of this bill, which would authorize an ongoing program of water resources research at designated institutes in the States.

This financial assistance to designated water resources research institutes is a very low cost method for planning, conducting, and arranging for competent research in relation to water resources. The authorized funding would be only $8.1 million for each of the five fiscal years ending in FY 1988. Federal dollars will be matched with non-Federal dollars on a declining ratio over the five years.

Other Federal water research programs are being eliminated or reduced. The Office of Water Research and Technology, which coordinated and informed users concerning much of the water resources research by universities has been abolished. Financial aid to state water planning through the Water Resources Council Title III program has ceased.

The Federal government should not sever its final links between it and state agencies and university researchers.

Persons involved with water management and use state that there is a shortage of trained individuals qualified to deal with the growing problems of water quantity and quality. The university water research institutes provide practical training opportunities for graduate students who will become hydrologists and water planners if they are able to complete their studies.

As the nation's largest conservation organization, with over four million members and supporters, we receive many letters expressing concerns and asking questions on water issues. We know how important water is to the economic and environmental health of this country. I trust that Congress can continue to support objective research through our fine land grant water resources research institutes.

Sincerely,

Jay D. Hair

JAY D. HAIR
Executive Vice President

United States Department of the Interior

OFFICE OF WATER POLICY
WASHINGTON, D.C. 20240

APR 1983

Dr. Thomas A. Skirbunt
Professional Staff Member
Committee on Environment
and Public Works
United States Senate
Washington, D. C. 20510

Dear Dr. Skirbunt:

The accompanying information in response to your March 28, 1983 request is for use by the Subcommittee on Water Resources in its further deliberations on S. 684, the "Water Resources Research Act of 1983."

Sincerely,

Thomas G. Bahr
Director

Enclosures

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QUESTIONS AND ANSWERS ON S. 684

Q. In your testimony you alluded to an existing $300 million Federal research program, and that the research which would be conducted under S. 684 would be duplicative. Please provide a detailed breakdown of this $300 million research activities, and indicate which part is duplicative of S. 684.

A. We forwarded this information in separate correspondence dated March 30, 1983.

Q. Assuming a bill such as S. 684 becomes law, how could it be improved?

A. Since we are in opposition to the basic provisions of S. 684, we can make no recommendations for improvement.

Q. What are the views of the Department on the management provisions of S. 684? If the Department views them as inadequate, why, and how could they be improved?

A. Again, since we are in opposition to the basic provisions of S.684, we can make no recommendations for improvement.

Q. Testimony has been heard suggesting that management of the S. 684 program should be conducted by the USGS, the Bureau of Reclamation, and the Agriculture Department. Please outline the reasons for placing this program in each of the above.

A. Congress has the prerogative of selecting the Department to manage the program. If the Department of Interior is selected, the Secretary should be given the flexibility to determine its administrative placement in the Department. The Department is currently undertaking a study on water research policy, and until the study is completed we are not in a position to recommend program placement.

Q. How and when do you intend to obligate the funds appropriated for FY 1983 for the State institutes? Please be specific.

A. We will obligate $115,000 of FY 1983 funds to each of the 54 State Institutes following our approval of their proposed 1983 programs. The first of these approvals should occur in early May 1983. We expect the last of the Institute proposals to reach OWP in July 1983.

Q. Do you anticipate having any unexpended balance from this appropriation?

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A. No. We expect to obligate all FY 1983 funds before the end of FY 1983.

Q. On February 23, 1983, you sent out a notice to the water institute directors listing a number of policies such as "streamlining the reporting process to emphasize policy implications of the research" and "decentralization of the project approval process from the Federal to the state and regional level." Would you please tell us in some detail what changes will occur in the management of this program as a result of this notice?

A. On February 23, 1983, we met with the eight representatives of the National Association of Water Institute Directors in Denver to agree on policies. We sent our followup memorandum to all institutes on February 28, 1983. The management changes follow:

o Decentralize the technical review process from the Federal to the State and regional level.

Comment: Evaluation and screening of proposals for technical merit, formerly the option of the institute, will now be done at the State and regional level in close collaboration with State water officials. OWP will exercise oversight on regional evaluations and no longer engage in time consuming and unnecessary Washington level review.

o Place higher priority on projects addressing regional problems.

Comment: Each institute will now be required to focus its research on critical regional water problems as described in regional plans they prepared jointly in 1980. Regional peer review with OWP participation will insure that the projects selected have regional and not just local significance.

o Limit to $20,000 the amount of Federal funds available for research administration in each institute director's office.

Comment: This limitation will direct more Federal funds into actual research since many institutes used as much as one half of the available funds for program management.

o Require on-time delivery of products from prior awards as condition of receipt of new funds.

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Comment: Previous administration of the program did not encourage timely reporting which resulted in hundreds of overdue reports, some as long as 10 years overdue. Our new policy of withholding funds until delinquencies are resolved will result in prompt reporting and simply reflects responsible management.

o Streamline the reporting process to emphasize policy implications of research.

Comment: Technical reporting will still be required for purposes of scientific evaluation by peers, but the Department will now require understandable synopses of each project, which will make it far easier to report to policy officials in government about the practical implications of research findings.

o Encourage greater collaboration between institutes and state government officials who deal in water matters.

Comment: State water officials often had limited opportunity to comment on the relevance of proposed research resulting in wide dispersal of research funds on topics of dubious value in State water policy decision-making. Encouraging greater collaboration and requiring evidence of such collaboration will not only bring the program into closer compliance to the spirit of the authorizing legislation but will result in a program that will have more relevance to the information needs of State water managers.

Q. Testimony was given that these new policy directives were creating difficult delays for the researchers involved, and great uncertainty on the availability of the appropriated funds for this fiscal year much before July. This would imply that you are taking seven months -- practically all of the fiscal year since enactment of appropriations -- to distribute these funds. What justification is there for this delay, and more concretely, what precise actions are being taken to obligate these funds expeditiously?

A. We are not clear as to which testimony you reference, but the Department has moved as rapidly as possible in the short time since passage of the appropriation. The new policy directives have in fact expedited the process by eliminating what was normally a 90-day Departmental proposal review process. There should be no uncertainty about the availability of funds since we notified all Institutes on February 28, 1983, that funds were available and that they should begin to prepare proposals.

The Department is on record as opposing this program and requested no funding for FY-83. In earlier years, OWRT assumed and supported continued funding for the program and invited proposals far in advance of the actual appropriation. When the appropriation was signed into law, all the paperwork and proposal reviews had been completed, and funds could be released immediately. Being responsible managers, it would have been inappropriate for us to encourage Institutes to begin work on an FY-83 program we did not request and which we had no assurance would be funded. Had the program not been funded and had we given the go ahead to Institutes to prepare their FY-83 program proposals, over 500 scientists and hundreds of university administrators would have wasted an estimated 50,000 man-hours of effort in preparing for a program that would not exist.

II

98TH CONGRESS
1ST SESSION

S. 684

To authorize an ongoing program of water resources research.

IN THE SENATE OF THE UNITED STATES

MARCH 3 (legislative day, FEBRUARY 23), 1983

Mr. ABDNOR (for himself and Mr. MOYNIHAN) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

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A BILL

To authorize an ongoing program of water resources research.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act shall be cited as the "Water Resources Research Act of 1983".

SEC. 2. The Congress finds and declares that—

(a) the existence of an adequate supply of water of good quality for the production of materials and energy for the Nation's needs and for the efficient use of the Nation's energy and water resources is essential to national economic stability and growth, and to the well-being of the people;

(b) there is an increasing threat of impairment to the quantity and quality of surface and ground-water resources;

(c) the Nation's capabilities for technological assessment and planning and for policy formulation for water resources must be strengthened at the Federal, State, and local governmental levels;

(d) there should be a continuing national investment in water and related research and technology commensurate with growing national needs;

(e) it is necessary to provide for the research and development of technology for the conversion of saline and other impaired waters to a quality suitable for municipal, industrial, agricultural, recreational, and other beneficial uses; and

(f) the pool of scientists, engineers, and technicians trained in fields related to water resources constitutes an invaluable natural resource which should be increased, fully utilized, and regularly replenished.

SEC. 3. It is the purpose of this Act to assist the Nation and the States in augmenting their water resources science and technology as a way to—

(a) assure supplies of water, sufficient in quantity and quality, to meet the Nation's expanding needs for the production of food, materials, and energy;

(b) identify and find practical solutions to the Nation's water and water resources related problems, particularly those problems related to impaired water quality;

(c) promote the interest of State and local governments as well as private industry in research and the development of technology that will reclaim waste water and to convert saline and other impaired waters to waters suitable for municipal, industrial, agricultural, recreational, and other beneficial uses; and

(d) coordinate more effectively the Nation's water resources research programs.

SEC. 4. (a) The Secretary of the Interior (hereinafter referred to as the "Secretary") is authorized and directed to assist the work of any water resources research and technology institute, center, or equivalent agency (hereinafter referred to as the "institute") established in the States in accordance with the terms of subsection (f) of this section.

(b) Each designated institute shall—

(1) have responsibility for planning, conducting, and/or arranging for competent research in relation to water resources, including investigations and experiments of either a basic or practical nature, or both; to promote the dissemination and application of the results of these efforts; and to provide for the training of

scientists and engineers through such research, investigations, and experiments, and

(2) cooperate closely with other colleges and universities in the State that have demonstrated capabilities for research, information dissemination, and graduate training in order to develop a statewide program designed to resolve State and regional water and related land problems. Such institute shall also cooperate closely with regional consortia, as may be designated by the Secretary to increase the effectiveness of the institutes and for the purpose of regional coordination.

(c) Prior to the receipt each fiscal year of funds authorized by subsection (e) of this section, each institute shall submit to the Secretary for his approval a water research program that includes assurances, satisfactory to the Secretary, that such program was developed in close consultation and collaboration with the director of that State's department of water resources, or similar agency, and other leading water resources officials with the State, including interested members of the public. The program described in the preceding sentence shall include plans to promote research, training, information dissemination, and other activities meeting the needs of the State and Nation, and encourage regional cooperation among institutes in research into areas of water

management, development, and conservation that have a regional or national character.

(d) From the sums appropriated pursuant to subsection (e) of this section, the Secretary shall make grants to each designed institute to be matched on a basis of no less than one non-Federal dollar for every Federal dollar during the fiscal years ending September 30, 1984, and September 30, 1985, one and one-half non-Federal dollars for each Federal dollar during the fiscal years ending September 30, 1986, and September 30, 1987, and two non-Federal dollars for each Federal dollar during the fiscal year ending September 30, 1988.

(e) There is hereby authorized to be appropriated to the Secretary for the purpose of carrying out this section the sum of $8,100,000 during each of the fiscal years ending September 30, 1984, through September 30, 1988.

(f) For the purposes of this section, an institute may be established at one college or university in each State, which was established in accordance with the Act approved July 2, 1862 (12 Stat. 503; 7 U.S.C. 301ff), entitled "An Act donating public lands to the several States and territories which may provide colleges for the benefit of agriculture and the mechanic arts" or some other institution designated by act of the legislature of the State concerned: *Provided,* That (1) if there is more than one such college or university in a State

established in accordance with said Act of July 2, 1862, funds under this section shall, in the absence of a designation to the contrary by act of the legislature of the State, be paid to the one such college or university designated by the Governor of the State to receive the same, subject to the Secretary's determination that such college or university has or may reasonably be expected to have the capability of doing effective work under this title; (2) two or more States may cooperate in the designation of a single institute or regional institute, in which event the sums otherwise allocated to institutes in each of the cooperating States shall be paid to such regional institute.

SEC. 5. (a)(1) In addition to the grants authorized by section 4 of this Act, the Secretary is authorized to make grants, on a dollar-for-dollar matching basis to the institutes established pursuant to section 4 of this act, as well as other qualified educational institutions, private foundations, private firms, individuals, and agencies of local or State government for research concerning any aspect of a water-related problem which the Secretary may deem to be in the national interest, including the operation of test facilities.

(2) In cases where the Secretary determines, according to criteria established by him, that research under this section is of a basic nature which would not otherwise be undertaken, the Secretary may approve grants under this section on a

matching requirement other than that specified in paragraph (1) of this subsection.

(b) Each application for a grant pursuant to this section shall state the nature of the project to be undertaken, the period during which it will be pursued, the qualifications of the personnel who will direct and conduct it, the importance of the project to the Nation as well as to the region and State concerned, its relation to other known research projects previously or currently being pursued, and the extent to which it will provide an opportunity for the training of water resources scientists. No grant shall be made under this section except for a project approved by the Secretary, and all grants shall be made upon the basis of the merit of the project and the need for the knowledge it is expected to produce when completed.

(c) The sum of $13,000,000 is authorized to be appropriated to the Secretary for the purposes of grants under this section, as well as for administration of grants under this section and grants to the institutes under section 4 of this act for each of the fiscal years ending September 30, 1984, through September 30, 1988.

SEC. 6. The type of research to be undertaken under the authority of section 5 of this Act and to be encouraged by the institutes established under section 4 of this Act shall include, without being limited to—

(a) aspects of the hydrologic cycle;

(b) supply and demand for water;

(c) demineralization of saline and other impaired waters;

(d) conservation and best use of available supplies of water and methods of increasing such supplies;

(e) water reuse;

(f) depletion and degradation of ground water supplies;

(g) improvements in the productivity of water when used for agricultural and commercial purposes;

(h) the economic, legal, engineering, social, recreational, biological, geographic, ecological, and other aspects of water problems;

(i) scientific information dissemination activities, including identifying, assembling, and interpreting the results of scientific and engineering research on water resources problems; and

(j) providing means for improved communication of research results, having due regard for the varying conditions and needs for the respective States and regions.

SEC. 7. Notwithstanding any other provision of law, the Secretary shall be governed by the provisions of sections 9 and 10 of the Federal Nonnuclear Energy, Research, and

Development Act of 1974 (Public Law 93–577; 88 Stat. 1887, 1891; 42 U.S.C. 5908–5909) with respect to patent policy and to the definition of title to, and licensing of inventions made or conceived in the course of, or under any contract or grant pursuant to this title: *Provided, however,* That subsections (l) and (n) of section 9 of such Act shall not apply to this Act: *And provided further,* That, subject to the patent policy of section 408, all research or development contracted for, sponsored, cosponsored, or authorized under authority of this title, shall be provided in such manner that all information, data, and know-how, regardless of their nature or mediums, resulting from such research and development will (with such exceptions and limitations, if any, as the Secretary may find to be necesssary in the interest of national defense) be usefully available for practice by the general public.

SEC. 8. (a) Public Law 95–467 is repealed.

(b) Rules and regulations issued, prior to the date of enactment of this Act, under the authority of Public Law 95–467 shall remain in full force and effect under this Act until superseded by new rules and regulations promulgated under this Act.

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